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the service lives of the intermediate carrier media are reduced via these measures. Given a double-sided transfer printing of toner images onto carrier materials to be printed, further problems occur when the carrier material to be printed has a smaller width than the width of the intermediate carrier medium. This arrangement leads to a charge carrier exchange between the intermediate carrier media directly contacting in the regions adjacent to the carrier material when a first toner image on a first intermediate carrier medium is transfer-printed onto the front side of the carrier material and a second toner image is transfer-printed from a second intermediate carrier medium onto the back side of the carrier material in a common transfer printing region and the surfaces of the intermediate carrier media contact at least in one region adjacent to the carrier material. The intermediate carrier media adjacent to the carrier material are in direct contact, whereby an equalization current flows past laterally to the print substance. Due to this equalization current and the exchange of the charge carriers thereby effected given contacting of the surfaces of the intermediate carrier media, an interruption of the electrical field in the transfer printing region occurs as a result of the relatively good electrical conductivity of the low-ohmic intermediate carrier media.

Known intermediate carrier media are characterized by parameters specified in standards (such as, for example, ASTM D257 or IEC 60093), in particular characterized by the specific volume resistance and the specific surface resistance. It is thereby assumed that the electrical properties of the intermediate carrier material are homogeneous and exhibit no direction-dependent properties.

A transfer belt that is comprised of at least two layers is known from the document JP-A-2000 315 020, whereby the upper layer has a higher resistance value than the other layers.

A transfer belt on whose top side are arranged two oppositely-situated layers is known from the document JP-A-11 352 785, whereby the volume resistance of the outer layer is smaller than the volume resistance of the underlying layer. The outer

layer serves as a discharge layer. A transfer roller that comprises a plurality of layers arranged atop one another is known from the document JP-A-11 073 036, whereby at least one layer comprises a conductive powder (such as carbon or conductive metal oxide) that is arranged distributed in a polymer material.

An arrangement is known from the document JP-A-2001 034 074 in which the resistance of a continuous belt is determined in the thickness direction with the aid of two oppositely-situated electrodes.

It is the object of the invention to specify an intermediate image carrier via which qualitatively high-grade print results are achieved even at relatively high process speeds.

This object is achieved via a continuous intermediate image carrier with the features of the patent claim 1. Advantageous developments are specified in the dependent patent claims.

The distinctiveness of the inventive intermediate image carrier is that its electrical conductivity in the thickness direction is smaller between two measurement points that are essentially directly opposite one another than between two laterally-offset measurement points. The advantages of high-ohmic carrier materials and the advantages of low-ohmic carrier materials can thereby be combined with one another in a simple manner without the respective disadvantages arising.

The electrical conductivity between the two laterally-offset measurement points can thus be selected in a simple manner at least so high that the ignition voltage of a gas discharge is prevented between the intermediate image carrier and an image carrier from which a toner image should be transferred onto the intermediate image carrier. The electrical conductivity of the intermediate image carrier can also be selected at least so low between the two laterally-offset measurement points and at least so high between the two measurement points essentially directly opposite one another that a sufficiently-large electrical field for transfer of the toner image from the intermediate image carrier onto a final image carrier can be generated in order to achieve a high transfer printing efficiency. The electrical conductivity of the intermediate image carrier in the thickness direction between the two measurement points essentially opposite one another can also be selected in a simple manner at least so low that partial discharges on the surface of the intermediate image carrier are prevented.

An intermediate image carrier with a different electrical conductivity between the described measurement points is thus suitable to be used even in high-capacity printers with process speeds > 200 pages DIN A4 per minute and in full color printers with > 50 pages DIN A4 per minute. Qualitatively high-grade print results can then also be achieved at such high process speeds.

For better understanding of the present invention, reference is made in the following to the preferred exemplary embodiments shown in the drawings, which

preferred exemplary embodiments are described using specific terminology. However, it is noted that the protective scope of the invention should not thereby be limited since such variations and further modifications to the shown devices as well as such further applications of the invention as they are shown therein are viewed as typical present or future technical knowledge of a competent average man skilled in the art. The Figures show exemplary embodiments of the invention, namely:

Figure 1 a schematic representation of a section of an electrophotographic printer at a transfer printing point for transfer of a toner image from a photoconductor belt onto a transfer belt;

The transfer belts 20, 46 are advantageously continuous belts with a thickness between 50 μm and 1000 μm given a length of 1000 mm to 30000 mm and a width in the range between 100 mm and 1000 mm. The transfer belts 20, 46 comprise an electrically-insulating synthetic in which are dispersed conductive particles (such as, for example, carbon black or metallic material. Ionic conductive additives such as, for example, salts or conductive synthetics (in particular polyaniline) can alternatively or additionally be introduced into the insulating elastomer. These particles are then introduced into the base material 10 with a suitable distribution, aligned and agglomerated [sic] that the transfer belt 20, 46 has the desired anisotropic properties. The insulating synthetic can, for example, be an elastomer.

Alternatively, the transfer belt 20, 46 can also be produced from a plurality of layers of various synthetics with different conductivity. The layers advantageously run parallel to the surface of the transfer belt 20, 46.

The desired anisotropic electrical properties of the transfer belt 20, 46 can be generated via the combination of synthetic layers with different slice thickness and conductivities, whereby at least one of the synthetic layers has anisotropic electrical properties. In other embodiments it is also possible that all synthetic layers have anisotropic electrical properties. The individual layers can also be produced from isotropic conductive elastomers, whereby an anisotropic total composite of the transfer belt 20, 46 is generated given a suitable selection of suitable conductivities and layer thicknesses of the individual layers.

Although preferred exemplary embodiments have been shown and described in detail in the drawings and in the preceding specification, they should be viewed as purely exemplary and not as limiting the invention. It is noted that only the preferred exemplary embodiments are shown and described, and all variations and modifications that presently or in the future lie within the protective scope of the invention should be protected.